

PCS Instruments ABSSL - Automated BOCLE System - Scuffing Load



The PCS Instruments ABSSL (Automated BOCLE System - Scuffing Load) is a fully automatic laboratory instrument for carrying out lubricity testing of diesel (middle distillate) fuel. It fully conforms to the requirements of ASTM D-6078 "Standard Test Method for Evaluating Lubricity of Diesel Fuels by the Scuffing Load Ball-on-Cylinder Lubricity Evaluator (SLBOCLE)". The instrument can also perform tests according to ASTM D-5001 "Measurement of lubricity of aviation turbine fuels". The existing PCS ABS (Automated BOCLE System) instrument can be easily modified to allow the SL-BOCLE tests to be carried out. Alternatively, the ABSSL instrument can be supplied as new.

The ABSSL system comprises a single, compact, bench top unit, accessories, calibration kit and user manual. All that is required on site is mains power and compressed air to ASTM D-6078 specification.

The instrument utilises a flooded, ball on cylinder contact geometry. In order to detect the sudden rise in friction coefficient which characterises scuffing, a load cell is incorporated into the load arm assembly. This is able to measure the tangential friction force between the rotating disc and stationary ball.

To determine the scuffing resistance of a fuel, a number of tests are carried out on the fluid sample using a stepwise series of loads. The load sequence is followed until the maximum load which can be applied without causing scuffing has been determined. The higher the SL-BOCLE load rating a fuel has, the more resistant it is to scuffing.

The ABSSL microprocessor is pre-programmed with the load sequence and will guide the user through the incremental load sequence defined in the ASTM test method. Should any changes to the ASTM test procedure occur, the microprocessor can easily be reprogrammed. Alternatively, if a single test load which is considered to represent an acceptable scuffing limit has already been established, a single load test may be carried out. The stepwise test is defined as procedure A in ASTM D-6078 and the single load test is defined as procedure B in the same method. The ABSSL is capable of carrying out tests to either procedure.



Advantages:

- Microprocessor control of all instrument functions.
- Can do both ASTM D-5001 and ASTM D-6078.
- Simple user interface. Instrument functions can be upgraded by downloading new firmware.
- Both the standard ASTM D6078 test sequences (Procedure A and B) pre-loaded into microprocessor controller.
- Automatic control of whole test sequence.
- No operator-induced variability in test results.
- Automatic flow controllers for moist and dry air.
- No operator input needed to set the humidity and flow rate of the conditioned air.
- Optional PC-based control and data logging software.
- Allows alternative test programmes to be downloaded into instrument and test parameters to be recorded as a permanent record.
- Interchangeable humidity and temperature probes.
- Humidity and temperature measurement does not need to be re-calibrated - simply replace the combined RH and temperature probe with an exchange pre-calibrated unit.
- Single source of supply for both the test rings and test equipment.

PCS Instruments

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